

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
8 January 2004 (08.01.2004)

PCT

(10) International Publication Number
WO 2004/003422 A1

(51) International Patent Classification⁷: F16L 55/128

(81) Designated States (national): AE, AG, AL, AM, AT (utility model), AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ (utility model), CZ, DE (utility model), DE, DK (utility model), DK, DM, DZ, EC, EE (utility model), EE, ES, FI (utility model), FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK (utility model), SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(21) International Application Number:
PCT/NO2003/000204

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(22) International Filing Date: 19 June 2003 (19.06.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
20023099 26 June 2002 (26.06.2002) NO

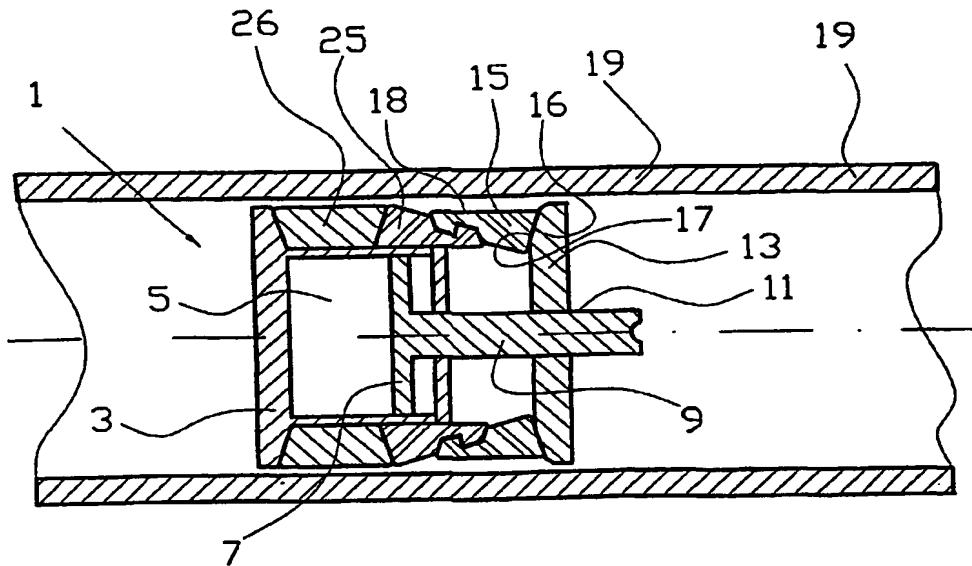
(71) Applicant (for all designated States except US):
PLUGGING SPECIALISTS INTERNATIONAL
AS [NO/NO]; Fabrikkveien 15, N-4033 Stavanger (NO).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: DEVICE FOR FASTENING A MANOEUVRABLE PLUG FOR PLUGGING PIPES



WO 2004/003422 A1

(57) Abstract: Arrangement at a plug for sealing liquid- or gas-carrying pipes, comprising several slips (15) arranged peripherally on the plug, so as to allow them to be pushed up along a conical force ring (25) by means of a hydraulic cylinder (5), where the slips (15) are provided with a possibly divided sliding surface (19, 19') and at least one possibly divided sliding surface (20, 23) having an angle that differs from the angle of the sliding surface (19, 19'). The force ring (25) has sliding surfaces (27, 29, 29', 31) that correspond to the sliding surfaces (19, 19', 20, 23) of the slips. The first part of the sliding surfaces (20, 23, 27, 31) has a steep gradient and the second part of the sliding surfaces (21, 21', 29, 29') has a small gradient.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/NO 03/00204

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: F16L 55/128

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: F16L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-INTERNAL, WPI-DATA, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GB 2286868 A (STOLT COMEX SEAWAY LIMITED), 30 August 1995 (30.08.95) --	1-6
A	US 6241424 B1 (BATH ET AL), 5 June 2001 (05.06.01) -- -----	1-6

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

Date of mailing of the international search report

24-10-2003

22 October 2003

Name and mailing address of the ISA/
Swedish Patent Office
Box 5055, S-102 42 STOCKHOLM
Facsimile No. + 46 8 666 02 86

Authorized officer

Jenny Petersson / JA A
Telephone No. + 46 8 782 25 00

INTERNATIONAL SEARCH REPORT

Information on patent family members

06/09/03

International application No.

PCT/NO 03/00204

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
GB 2286868 A	30/08/95	GB	9403061 D	00/00/00
		GB	9504421 D	00/00/00
		NO	950576 A	18/08/95
US 6241424 B1	05/06/01	US	6003495 A	21/12/99
		WO	9958848 A	18/11/99